

In The Claims:

The listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (canceled).

2. (currently amended) ~~A deposition system according to Claim 1~~ A deposition system for depositing a layer on a substrate, the deposition system comprising:

a process chamber;

a susceptor in the process chamber, the susceptor being configured to receive a substrate for depositing a layer thereon;

a showerhead on a side of the process chamber, the showerhead being configured to receive reaction gases and to introduce the reaction gases into the process chamber, the showerhead including a heating element therein for heating reaction gases prior to introducing the reaction gases into the reaction chamber, wherein the showerhead is further configured to spray the reaction gases into the process chamber in parallel with a substrate received on the susceptor.

3. (original) A deposition system according to Claim 2 wherein the showerhead comprises:

a housing,

at least one inlet port through which the reaction gases are received into the showerhead; and

a spray plate adjacent the process chamber through which reaction gases are introduced into the process chamber;

wherein the heating element comprises a heating wire in the housing between the inlet port and the spray plate.

4. (original) A deposition system according to Claim 3 wherein the heating wire comprises a catalytic material.

5. (original) A deposition system according to Claim 4 wherein the heating wire comprises tungsten.

6. (original) A deposition system according to Claim 3 wherein the heating wire comprises a coiled wire.

7. (original) A deposition system according to Claim 3 wherein the housing includes first and second terminals therein and wherein first and second ends of the heating wire are respectively connected to the first and second terminals.

8. (original) A deposition system according to Claim 7 wherein each of the first and second terminals comprises an elastic connecting portion to which the heating wire is connected.

9. (original) A deposition system according to Claim 8 wherein the housing further includes insulators that electrically insulate the terminals from conductive portions of the housing.

10. (original) A deposition system according to Claim 3 wherein the showerhead further comprises a cooling portion configured to cool an outer portion of the housing.

11. (original) A deposition system according to Claim 10 wherein the cooling portion comprises a duct on an outer portion of the housing, wherein the duct is configured to provide circulation of a cooling fluid therethrough.

12. (currently amended) ~~A deposition system according to Claim 1~~ A deposition system for depositing a layer on a substrate, the deposition system comprising:
a process chamber;

a susceptor in the process chamber, the susceptor being configured to receive a substrate for depositing a layer thereon;

a showerhead on a side of the process chamber, the showerhead being configured to receive reaction gases and to introduce the reaction gases into the process chamber, the showerhead including a heating element therein for heating reaction gases prior to introducing the reaction gases into the reaction chamber;

wherein the showerhead comprises a plurality of plenums therein such that each plenum receives at least one respective reaction gas from a respective gas inlet port such that reaction gases from the plenums are introduced into the process chamber without prior mixing of the reaction gases between plenums within the showerhead wherein the plurality of plenums comprises respective base portions thereof having spray holes therethrough, wherein the respective base portions are co-planar, wherein the first plenum defines a first cavity providing fluid communication between a first gas inlet port and a first plurality of spray holes, wherein the second plenum defines a second cavity providing fluid communication between a second gas inlet port and a second plurality of spray holes, wherein the first and second cavities are separated, and wherein the first plenum has a length perpendicular to the co-planar base portions that is greater than a length of the second plenum perpendicular to the co-planar base portions.

13. (currently amended) A deposition system according to Claim 12 wherein a the first of the plenums includes a heating element therein configured to heat gases passing through the first plenum and wherein a the second of the plenums is free of a heating element.

14. (currently amended) ~~A deposition system according to Claim 13~~ A deposition system for depositing a layer on a substrate, the deposition system comprising:

a process chamber;

a susceptor in the process chamber, the susceptor being configured to receive a substrate for depositing a layer thereon; and

a showerhead on a side of the process chamber, the showerhead being configured to receive reaction gases and to introduce the reaction gases into the process chamber, the

showerhead including a heating element therein for heating reaction gases prior to introducing the reaction gases into the reaction chamber;

wherein the showerhead comprises a plurality of plenums therein such that each plenum receives at least one respective reaction gas such that reaction gases from the plenums are introduced into the process chamber without prior mixing of the reaction gases between plenums within the showerhead;

wherein a first of the plenums includes a heating element therein configured to heat gases passing through the first plenum and wherein a second of the plenums is free of a heating element;

wherein the first plenum includes an extended portion such that the first plenum extends further from the process chamber than the second plenum and wherein the heating element is located in the extended portion of the first plenum.

15. (original) A deposition system according to Claim 14 further comprising a duct on the extended portion of the first plenum wherein the duct is configured to provide circulation of a cooling fluid therethrough.

16. (original) A deposition system according to Claim 1 wherein the susceptor is configured to receive a substrate for depositing a layer thereon through atomic layer deposition.

17. (original) A deposition system according to Claim 1 wherein the susceptor is configured to receive a substrate for depositing a layer thereon through chemical vapor deposition.

18. (original) A deposition system according to Claim 1 further comprising a boat in the process chamber wherein the boat supports the first susceptor and at least a second susceptor with each susceptor being configured to receive at least one substrate for deposition of a layer thereon.

Claims 19-20 (canceled).

21. (new) A deposition system according to Claim 14 wherein the first and second plenums share a same spray plate having spray holes therethrough for the first and second plenums.

22. (new) A deposition system according to Claim 14 wherein first and second plenums comprise respective first and second base portions thereof having spray holes therethrough wherein the first and second base portions of the first and second plenums are co-planar.

23. (new) A deposition system according to Claim 22 wherein the first and second base portions comprises respective portions of a same spray plate.

24. (new) A deposition system according to Claim 14 wherein portions of the first and second plenums extend outside the process chamber.

25. (new) A deposition system according to Claim 12 wherein the first and second base portions comprises respective portions of a same spray plate.

26. (new) A deposition system according to Claim 12 wherein portions of the first and second plenums extend outside the process chamber.

27. (new) A deposition system according to Claim 12 wherein the first and second plenums are separated along a continuous plane therebetween.